

## BOREAL TOAD IN CLEAR CREEK COUNTY, COLORADO

RICHARD M. ENGEMAN AND ROBERT W. CONNELL

Many amphibian populations worldwide have experienced recent population declines (e.g. Barinaga 1990). Included among these are declines for the boreal toad (*Bufo boreas boreas*) in the central Rocky Mountains (Corn et al. 1989; Stolzenburg 1989). The extent of the population declines is such that boreal toad populations in the Rocky Mountains have been included on the list of species to be reviewed by the U.S. Fish and Wildlife Service for Threatened or Endangered status (Federal Register 1989). We report here an additional population site for the boreal toad in Colorado.

On 25 July 1987, we captured two adult boreal toads (each approximately 80 mm in length) along Clear Creek, 0.8 and 2.4 km west of the Bakerville exit from Interstate 70 in Clear Creek County, Colorado (39°41'32"N, 105°43'42"W, elev. 3000 m; 39°41'47"N, 105°48'42"W, elev. 3036 m, respectively). In this area Clear Creek flows down a steep-sided valley forested primarily with lodgepole pine (*Pinus contorta*), spruces (*Picea* spp.) and aspen (*Populus tremuloides*). The toads were found in marshy riparian habitat dominated by willows (*Salix* spp.). The toads were held long enough to be positively identified and then released (*B. boreas* lacks cranial crests which are present on the Woodhouse's toad (*B. woodhousii*), the only other *Bufo* in the region). This is the first record for *B. boreas* in Clear Creek County, although it has been found in neighboring counties (Hammerson 1982).

Clear Creek County was once thought to be unsuitable habitat for amphibians due to mine drainage polluting the watersheds (Porter and Hakanson 1976). However, both leopard frogs (*Rana pipiens*) and tiger salamanders (*Ambystoma tigrinum*) have since been found in the county (Hammerson 1982). Also, current and past water chemistry data from Clear Creek County do not indicate any serious water quality problems in the area where these animals were captured (U.S. Environmental Protection Agency, Colorado Department of Health, unpubl. data). The Colorado Division of Wildlife, in cooperation with private organizations, has improved the trout habitat in Clear Creek by installing check dams. These projects may also benefit *B. boreas* by providing some additional breeding habitat in the form of shallow backwaters.

## LITERATURE CITED

- BARINAGA, M. 1990. Where have all the froggies gone? *Science* 247:1033-1034.
- CORN, P. S., W. STOLZENBURG, AND R. B. BURY. 1989. Acid precipitation studies in Colorado and Wyoming: interim report of surveys of montane amphibians and water chemistry. U.S. Fish and Wildl. Serv. Biol. Rep. 89(40.26). 56 pp.
- FEDERAL REGISTER. 1989. 54(4):554-579.
- HAMMERSON, G. A. 1982. Amphibians and reptiles in Colorado. Colo. Div. Wildl. Publ. No. DOW-M-1-27-82. 131 pp.
- PORTER, K. R., AND D. E. HAKANSON. 1976. Toxicity of mine drainage to embryonic and larval boreal toads (*Bufonidae: Bufo boreas*). *Copeia* 1976:327-331.
- STOLZENBURG, W. 1989. What are the toads telling us? *Colo. Outdoors* 38(2):24-27.

Denver Wildlife Research Center, P.O. Box 25266, Denver, CO 80225-0266 (RME); and 1050 Clarkson, Denver, CO 80218 (RWC). Received 9 April 1990, accepted 3 August 1990.